REMARKS/ARGUMENTS

I. Introduction:

Claims 1, 5, 12, and 17 are amended, claims 2, 4, 13, and 14 are canceled, and claim 21 is added herein. With entry of this amendment, claims 1, 3, 5-12, 15-18 and 20-21 will be pending.

II. Claim Rejections – 35 U.S.C. 103:

Claims 1-3, 9-13, and 17-20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,625,161 (Su et al.) in view of U.S. Patent Application Publication No. 2003/0112764 (Gaspard et al.).

Applicants' invention is directed to a method and system for defining hardware routing paths in a network having both IP paths and MPLS paths. The IP and MPLS paths are organized, sorted, and compared in a uniform manner so that maximum hardware path resource utilization can be achieved. Claim 1, for example, includes assigning a unique path ID for each path within a path group, comparing all path IDs in each path group, and assigning a common hardware resource to groups having matching path IDs. The path ID for each path includes an IP address.

Su et al. disclose a system which examines a continuous stream of packets departing from a network to identify a predetermined common criteria or attribute. The system then groups the packets into one or more traffic aggregates based on the common attribute of the packet. Each traffic aggregate is assigned to a specific communication channel or link.

Su et al. do not assign a unique path ID for each path within a path group. Instead, Su et al. group packets based on a common attribute such as destination address or source and destination address and then assigns each traffic aggregate to an interface at a network device. There are typically multiple paths between a network device and a destination node. Even if packets exit the network device at the same link, they may still be forwarded over different paths within the network. Su et al. do not discuss paths within the network or assign IDs to a path, as

set forth in the claims. Since there are no path IDs, there is no comparison of path IDs and no path groups.

As noted by the Examiner, Su et al. also do not disclose a method for defining hardware routing paths in a network having both IP paths and MPLS paths, or a path group that contains both IP and MPLS paths. With respect to this limitation, the Examiner cites Gaspard et al.

Gaspard et al. disclose a method for automatic discovery of logical links between network devices. As shown in Fig. 4, some IP links support both IP and MPLS forwarding. The conventional approach for a group of mixed IP and MPLS paths, as shown in Gaspard et al., is to deal with them separately. IP paths are based on next hop IP address and MPLS paths are based on MPLS encapsulation strings. The hardware paths thus contain different information in order to forward the packets onto MPLS or IP paths. In systems, such as Gaspard et al., each route requires independent hardware path resources to support IP and MPLS mixed load sharing paths.

Neither Su et al. nor Gaspard et al., either alone or in combination, show or suggest assigning a unique path ID comprising an IP address for both IP paths and MPLS paths within a path group, as set forth in the claims.

Even assuming, for the sake of discussion, that one would include both IP and MPLS paths of Gaspard et al. in the traffic aggregate of Su et al., this would not necessarily lead to Applicants' invention. In particular, the invention defined by claim 1 requires assignment of a unique path ID containing an IP address for each path within a path group. There is no teaching or suggestion in either reference of assigning an IP address as a path ID for an MPLS path. Without a common identifier for the IP and MPLS paths, there is no way to compare the path IDs or assign a common hardware resource. Applicants' invention, as set forth in the claims, provides a uniform way of handling IP and MPLS paths.

In a sincere effort to move along prosecution, claims 1, 12, and 17 have been amended to include the limitations of claims 2 and 4. As discussed above, none of the references cited show or suggest assigning a unique path ID comprising an IP address for each path within a group containing both IP and MPLS paths. Moreover, none of the references teach assigning a unicast IP address to IP paths and an IP multicast address to MPLS paths, as set forth in amended claims 1, 12, and 17.

In the Office action dated January 22, 2007, claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over Su et al. in view of Gaspard et al., and further in view of U.S. Patent No. 6,731,639 (Ors et al.). The Ors et al. patent does not show or suggest assigning a unique IP multicast address for each MPLS path. The Ors et al. patent is directed to MPLS for multiple access segments. As the Examiner notes in the rejection of claim 4, the switching node of Ors et al. assigns a multicast label to each MPLS path in the network. Ors et al. do not assign an IP multicast address for each MPLS path, as required by claims 4 and 14. In contrast to applicants' invention, Ors et al. simply assign a label to each MPLS path and perform conventional packet forwarding based on label information.

Accordingly, claims 1, 12, and 17, and the claims depending therefrom, are submitted as patentable over Su et al., Gaspard et al., and Ors et al.

The other references cited including U.S. Patent No. 6,728,268 (Bird), do not overcome the deficiencies of the primary references discussed above.

III. Conclusion:

For the foregoing reasons, Applicants believe that all of the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 399-5608.

Respectfully submitted,

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